**IT Applications Unit 3, AOS 1, Online Communities**

Complete the following, from pgs 3-14

**Networks are classified according to below and we will study the following:**

1. **Network Categories: LAN, WAN**
2. **Network Architecture, client-server; peer-to-peer; internet peer-to-peer; intranet**
3. **Network communication standards**
4. **Network hardware and software**
5. **Transmission media**
6. **Network security**

**What is a network?**

1. Describe the role of a network. A network connects computers together so that they can share data, information and resources such as printers, plotters, internet access, servers, modems and scanners.
2. What is groupware software? Provide an example. Groupware software is a service that allows for people in the group to see changes that have been made by other members in real time. One example is Dreamweaver.
3. Describe the nature of social networking sites. Social networking sites are websites that allow users to exchange information, photos and videos.
4. What is meant by real time? Real time means there is no delay in the sending and receiving of communications, the same as a face to face conversation.

**Advantages of networks**

Elaborate under each of the following advantages of networks:

1. Resource sharing
   1. Internet connection: Internet connection allows for almost instantaneous sending of resources.
   2. Printing: The sharing of printers is very advantageous in today’s society as a lot of documents are printed and it would be inconvenient to have to save a document to a hard drive and load it up on a computer that has exclusive access to a printer.
   3. Software: Resource sharing of software is mainly used to give people the opportunity to download necessary programs over the internet.
   4. Other resources including network-attached storage (NAS) servers
      1. Define a NAS server: A NAS server is a server that has its own storage
2. Remote Services
   1. Describe how a B2B network operates. A B2B network operates via an Extranet.
   2. What is an extranet? An extranet is a private network that operates using internet protocols and the public telephone system.
   3. What are the advantages of a B2B situation? The advantages are that it allows businesses to network with suppliers, vendors, partners, customers or other businesses.
   4. Describe the nature of EFTPOS. The nature of EFTPOS is that it allows for a shop to directly debit the sale from the customer’s bank account via a credit card.
3. Data and information sharing in organisations
   1. Outline how data and information sharing occurs through networks and how this is an advantage. Data and Information sharing is handles through network by people connected to the network sending or receiving the information or data that they or another person on the network needs.
   2. What is meant by the process of synchronising data? The process of synchronising data is to ensure that all users have the same data and that their servers are up-to-date.
   3. How does this prevent data duplication? Synchronisation prevents duplication by discarding anything that may be a duplicate during synchronisation.
4. Facilitating communications
   1. How do networks facilitate communications? Networks facilitate communications by being directly connected to each computer making all computers able to communicate with each other.

Types of networks, p 8

**1 Network categories**

1. Local Area Network, (LAN)
   1. Describe the nature of a LAN. LAN is a network that connects computers within a close geographical proximity.
   2. How has the advent of wireless technology changed the nature of the definition of a LAN? Wireless technology has allowed Computers that are not within the confines of a building to become part of a LAN network.
   3. What is a Node? A node is another name for a computer or something that is able to connect to a network.
   4. How are LAN typically connected? LAN are typically connected via Ethernet cables or wireless communication technologies.
   5. Describe a wireless LAN. A wireless LAN uses radio waves, satellite communications, microwave or infra-red media to transmit signals between Nodes.
2. Wide area network, (WAN)
   1. Describe the nature of a WAN including the transmission media. A WAN is one in which communications are carried by a medium owned by someone who is not part of the organisation whose data is being transmitted, The transmission media frequently used by WAN is Microwave, fibre-optic cable, telephone lines and satellites.
   2. List the different categories of WANs: A metropolitan area network that covers a single city, A state wide network that covers an entire state, A national area network, A worldwide network, such as the internet.
3. **Network architecture**
4. What is meant by network architecture? Network architecture includes the ways in which computers, devices and transmission media are connected.

Under each of the following three categories of network architecture answer the questions:

1. **Client-Server network**
   1. Describe the nature of this type of network.
   2. What is the role of a client?
   3. How does a server differ from an ordinary desktop computer?
   4. Explain what is meant by multi-tasking?
   5. Describe the nature of each of the following types of servers:
      1. File server
      2. Print server
      3. Database server
      4. Web server
      5. Domain name server
      6. Proxy server
      7. Backup server
      8. DHCP servers
      9. Active directory domain controller server
      10. Virtual server
2. **Peer-to-peer network**
   1. Describe the nature of this network.
   2. What are the limitations of this type of network?
   3. How does a simple home network operate?
3. **Internet peer-to-peer network**
   1. Describe the nature of this network.
   2. How does a user set up for this type of network?
   3. What are the risks associated with this type of network?
   4. What is BitTorrent?
   5. Complete the Think about IT, 1.5 activity on pg 13.
4. **Intranets**
   1. Define an intranet.
   2. List the benefits of an intranet.
   3. Why must an intranet reside behind a firewall?